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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/629,285  
Filing Date: July 29, 2003  
Appellant(s): WHITE ET AL.

John G. Posa (37,424)  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 09/26/2007 appealing from the Office action mailed 06/26/2007.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6,103,392	Dorfman et al.	8-2000
4,885,214	Trenkler et al.	12-1989

### **(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reddy et al (US Patent 5,792,677) in view of Dorfman et al (US Patent 6,103,392).

Reddy discloses a method of making an electronic device. As shown in the figures, this method involves providing a plurality of insulating substrate layers 12 and a plurality of metal layers 14 (see col. 4, lines 27-47). Reddy further discloses that the materials may comprise silver, aluminum copper or the like (see col. 4, lines 48-57). It is the examiner's position that it is well known in the art that metals inherently have a relatively high degree of thermal conductivity.

However, Reddy does not disclose the consolidation process as claimed by the applicant. Regarding this difference, the applicant is directed to the reference of Dorfman.

Dorfman discloses a method of making a composite. This method involves solid state sintering or consolidating metal materials into desired shapes (see col. 1, lines 46-51 and col. 3, lines 4-26).

It would have been obvious to one having ordinary skill in the art to employ a solid state consolidation process, as taught by Dorfman, in the method of Reddy in order to fabricate the metal layers with desired shapes. In addition, regarding claims 3-8 and 23-27, without the disclosure of unexpected results, it is the examiner's position that the specific materials (i.e. air, molybdenum, mesh, iron-nickel-cobalt alloy, wicking material, etc.) and components (i.e. sensor, fan, heat pump, etc.) claimed by the applicant are within the purview of one having ordinary skill in the art and would have been obvious to employ in the method of Reddy as a matter of choice based on the desired physical properties of the articles being manufactured.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reddy et al in view of Dorfman et al as described above in paragraph 2 in further view of Trenkler et al (US Patent 4,885,214).

Trenkler discloses a method for making a composite material. This method involves providing a powder metal matrix material 16 made of aluminum metal, copper metal or other metals (see col. 6, lines 56-59). The compacted mixture is subjected to heat treatment or other means of energy insertion like ultrasonic vibration, inductive heating or magnetic energy (see col. 6, lines 19-28).

It would have been obvious to one having ordinary skill in the art to employ an ultrasonic consolidation process, as taught by Trenkler, in the method of Reddy in view of Dorfman as described above in order to facilitate bonding of the materials. (Trenkler discloses inserting ultrasonic vibrations to a compacted mixture including a metal

powder in order to sinter the materials and form a high-strength, low weight composite material. It would have been obvious to one having ordinary skill in the art to employ an ultrasonic vibration inserting technique, as taught by Trenkler, in the method of Reddy in view of Dorfman in order to achieve the predictable result of effectively sintering the materials.) In addition, without the disclosure of unexpected results, it is the examiner's position that the specific consolidation technique (i.e. electrical resistance or friction vs. ultrasonic) are well known and conventional in the art and would have been obvious to employ in the above described method since they are functionally equivalent alternate expedients in the art. (In addition, Trenkler discloses that the heat treatment techniques may include, but are not limited to, ultrasonic, induction or magnetic. It is the examiner's Position that resistance, friction and ultrasonic heating are well known equivalents in the art. Therefore it would have been obvious to one having ordinary skill in the art to substitute resistance or friction heating for the ultrasonic heating of Trenkler in order to achieve the predictable result of effectively sintering the materials.)

**(10) Response to Argument**

A. The rejection of claims 1-11 and 23-27 under 35 U.S.C. 112, second paragraph.

Applicant's arguments are deemed persuasive by the examiner and the rejection of claims 1-11 and 23-27 under 35 U.S.C. 112, second paragraph is hereby withdrawn by the examiner.

B. Claims 1-8 and 23-27.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, solid state consolidation processes such as the one disclosed by Dorfman are well known for enabling materials to be consolidated in various shapes and configurations. Therefore it would have been obvious to one having ordinary skill in the art to employ a solid state consolidation process, as taught by Dorfman, in the method of Reddy in order to achieve the predictable results of fabricating the metal layers with any desired shape or configuration.

Applicant argues that the examiner bears the initial burden of presenting a prima facie case of obviousness. This is true. However, the examiner believes he has provided a prima facie case of obviousness to reject applicant's claims. On page 6 of the Latest Final OA, the examiner stated:

"Applicant has not provided any evidence or convincing line of reasoning why the specific materials or components are unobvious or generate unexpected results. Therefore applicant's arguments are not persuasive and the examiner believes the rejection is proper and appropriate."

By making this statement, the examiner's intended to invite the applicant to provide the examiner with some evidence or convincing line of reasoning in order to

overcome the rejection of the claims. However, applicant has not provided any such evidence or reasoning. Therefore the examiner believes the rejection of claims 1-8 and 23-27 is proper and appropriate.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant argues the passages of Dorfman cited by the examiner (col. 1, lines 46-51 and col. 3, lines 4-26) are unrelated to the pending claims. The examiner does not agree. Col. 1, lines 46-51 of Dorfman disclose that W-Cu composite powders are known to the prior art. This relates directly to applicant's claim 4 which recites that the first materials is copper. Col. 3, lines 4-26 describe the solid-state sintering process and requirements. This relates directly to applicant's claim 1, step a) which requires using a solid-state consolidation process. Therefore the examiner believes these two passages of Dorfman are relevant to applicant's claims.

C. Claims 9-11.

Applicant argues Trenkler does not teach or suggest an ultrasonic, resistance, or frictional consolidation, particularly in view of Appellant's disclosure. The examiner



does not agree. As stated above, col. 6, lines 19-28 of Trenkler discloses that compacted mixture is subjected to heat treatment or other means of energy insertion like ultrasonic vibration, inductive heating or magnetic energy. The examiner believes this disclosure of Trenkler is sufficient to reject applicant's claims in the manner described above.

Applicant argues there is no motivation to combine the teaching of Trenkler with Reddy in view of Dorfman. The examiner does not agree. Trenkler discloses inserting ultrasonic vibrations to a compacted mixture including a metal powder in order to sinter the materials and form a high-strength, low weight composite material. It would have been obvious to one having ordinary skill in the art to employ an ultrasonic vibration inserting technique, as taught by Trenkler, in the method of Reddy in view of Dorfman in order to achieve the predictable result of effectively sintering the materials. Therefore applicant's argument is believed to be incorrect in this instance.

Applicant argues Trenkler does not teach resistance or friction consolidation. The examiner does not agree. Trenkler discloses that the heat treatment techniques may include, but are not limited to, ultrasonic, induction or magnetic. It is the examiner's Position that resistance, friction and ultrasonic heating are well known equivalents in the art. Therefore it would have been obvious to one having ordinary skill in the art to substitute resistance or friction heating for the ultrasonic heating of Trenkler in order to achieve the predictable result of effectively sintering the materials. Therefore applicant's argument is believed to be incorrect in this instance.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/James Sells/  
James Sells  
Primary Examiner  
Technology Center 1700

Conferees:

/Christopher A. Fiorilla/  
Chris Fiorilla  
Quality Assurance Specialist  
TC 1700

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/Jennifer Michener/

Jennifer Michener

Quality Assurance Specialist, TC1700